

IN THE CLAIMS

Please replace any previous listing of the claims with the following replacement listing of the claims:

Replacement Listing of the Claims

1. (Currently amended) An infrared communications system comprising:
a multi-beam transmitter that comprises a single light source and an optical structure that converts light from said single light source to a plurality of collimated beams and to project said beams as produces an array of diffusing spots upon a reflecting surface; and
a receiver comprising a plurality of receiving elements;
wherein each said receiving element has an independent field of view that is in a line of sight of at least one of said diffusing spots.
2. (Original) The communications system of claim 1, wherein said reflecting surface is a ceiling of a room.
3. (Original) The communications system of claim 1, wherein said array is in the form of a regular grid.
4. (Currently amended) The communications system of claim 31, wherein said grid of diffusing spots is formed via the emission from said transmitter of a plurality of collimated beams of are of substantially equal intensity.
5. (Original) The communications system of claim 1, wherein said diffusing spots are approximately equidistantly positioned from one another.
6. (Currently amended) The communications system of claim 1, wherein said optical structure the transmitter comprises a light source, collimating optics, and a spot array generator.
7. (Original) The communications system of claim 6, wherein the spot array generator is a holographic optical element.
8. (Previously presented) The communications system of claim 1, wherein each said receiving element comprises a band-pass filter, a concentrator and a photodetector.

9. (Original) The communications system of claim 1, wherein each said receiving element is aimed in a different direction.
10. (Original) The communications system of claim 1, wherein said receiver is a multi-branch receiver.
11. (Original) The communications system of claim 1, wherein each said receiving element comprises a curved holographic mirror.
12. (Currently amended) A method of infrared communications comprising:
using a multi-beam transmitter comprises a single light source;
converting light from said single light source to a plurality of collimated light beams;
projecting said light beams as to produce an array of diffusing spots upon a reflecting surface; and
using a receiver that comprises a plurality of receiving elements to receive signals from at least one of said diffusing spots through said receiving elements, wherein each said receiving element has an independent field of view that is in a line of sight of at least one of said diffusing spots.
13. (Original) The method of infrared communication of claim 12, wherein said reflecting surface is a ceiling of a room.
14. (Original) The method of infrared communication of claim 12, wherein said array is in the form of a regular grid.
15. (Currently amended) The method of infrared communication of claim 14, wherein said ~~grid of diffusing spots is formed via the emission from said transmitter of a plurality of collimated beams~~ are of substantially equal intensity.
16. (Original) The method of infrared communication of claim 12, wherein said diffusing spots are approximately equidistantly positioned from one another.
17. (Original) The method of infrared communication of claim 12, wherein each said receiving element is aimed in a different direction.